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Wonderland in America.

By Mrs. Fenwick Miller.

THERE is a corner of the earth—only a corner, though it is some sixty square miles in extent — where Nature seems to have resolved to leave for our inspection a sample of the way in which our globe was made into the world in which we have to live to-day. Moreover, this show of her marvellous methods might have been organized by the late Mr. Barnum, so well is it laid out to keep up the interest of the visitor, and to show him ever new and constantly greater marvels. This is Nature's own arrangement, and not the artfulness of the surveyors who made the forest clearings that they are pleased to call roads. Geographically inevitable is it that one finds increasing marvels as one goes on, till the wonders of the beginning are presently looked back upon as comparatively small matters. But in memory the whole fuses into one gigantic Wonderland.

It is called "Yellowstone Park," from the chief river that flows through it, and afterwards passes down to fall into the great Missouri. This river was named the "Yellowstone," from the singular colour of the clay that washes down with it and stains its waters, and when the Wonderland was visited first, the explorers kept along the river's bed for their guide, and named the whole region after it.

That first formal exploration took place only a matter of some twenty years ago. A few trappers had previously penetrated these recesses, and returned to tell tales that were jeered at by the incredulous hearers. But it was not till 1870 that the first exploring party, headed by the Surveyor-General of Montana, went through and prepared a formal report of its marvels. The Park is situated in the extreme north-west corner of Wyoming, and is at so high an altitude that the climate is bitterly cold during most of the year, so that the land can never be cultivated. As it could not be utilized in that way, the United States Government resolved, on the report of the Surveyor, to reserve it for show purposes, and it was forthwith declared national property. Rules were made for its protection, and a party of cavalry was detailed to police it permanently. Moreover, the Government proceeded to make more or less effective roads through it, and it can now be visited with both safety and comfort. It is nearly four days' journey from New York—three days' from Chicago—but there are dining-cars and sleeping-cars on the two excellently managed railways over which the journey is made direct, the Wisconsin Central from Chicago to St. Paul, and the

"MINERVA TERRACE." [*Photograph.*

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Northern Pacific from there to the beginning of the Park; and in the Park itself there is a company which provides coaches and hotels, and which takes possession of the traveller, and conveys him from stage to stage of the show.

The first item on the programme is remarkable enough. In a wide valley, surrounded on every hand by tall and distant mountains, one comes upon a space of several acres covered by what at first sight seems to be a collection of low cliffs or rocks of chalk, shining brilliantly white under the fierce sun of the land. But the singular forms of these rocks demand closer inspection; for they are arranged as a series of terraces, rising one above another like wide steps in some places, while in others it is as though the waves of a mighty sea had been suddenly petrified, and only a few runlets of foam had trickled over before being frozen in place as they dropped. On making one's way up to and over them, one finds that the rocks are not so solid and hard as chalk, but are softer and more friable, and also that in many parts they are being soaked with water that slowly trickles down from the top of the whole "formation." Pursuing the flow of moisture on to its source, one comes, at the summit of each particular "formation," to a more or less large pool, constantly overflowing, because constantly replenished from the spring beneath; and the cloud of vapour that lingers over its whole surface, no less than the curious varieties of colours that surround the edges and tell of chemical deposits, makes us aware that this is no common pool. How should it be so, situated so strangely on the summit of a rock? It is, in fact, a large hot spring—not quite boiling, but so hot that, like the clever child who put down the red-hot poker without waiting to be told, the venturous visitor pulls out promptly the testing finger that he inevitably inserts. Yes, these are hot springs; and they have made all the rocks or "formations" that you see. The water rises from the earth at nearly boiling point, and thus, holding in solution a great deal of lime and other chemical matter, which is deposited as the water cools in the air, forms the curious rock-like shapes and terraces that are all around.

The whole covers over 170 acres, and there are thirteen distinct terraces. One that particularly impressed me was a ridge nicknamed "The Elephant's Back," scarce wider than the summit of Jumbo's person, and about thirty feet long. There are about a hundred little openings along this ridge of rock, out of each of which a tiny but fierce spurt of boiling water is violently thrusting itself in a furious effort to get free and out to the light, the water from each spreading over the surface already made, and there depositing more and ever more of the lime that itself serves to obstruct the further passage of the water that holds it, by depositing it for building up the terrace. Here for the first time I felt the sensation—afterwards renewed more strongly in other parts of the region—that the wild struggle of a mighty force to overcome a resistance made the ground unsafe beneath my feet—that it was only a question of time when a great convulsion must occur, and that that time might be now—in short, the comfortable conviction of standing on solid earth is seriously disturbed under such conditions, and a respectful uncertainty takes its place. Science has taught me before now that I live on a crust of soil over mighty subterranean fires and fierce internal commotions; but I have been hitherto where the crust was

From a] "GOLDEN GATE." *[Photograph.*

thick, and have not realized the solemnity of the truth. Here, the crust is a shell, and is pierced often enough to give a glimpse of the interior. It is disquieting to peep like this behind the merciful veil that covers in Nature's mysterious and awful processes; and worse is to come.

Some twenty-two miles farther on is the first of the geyser valleys or basins. It is reached by a road that is for the most part a monotonous passage through rows of tall and gloomy pine trees, but that has its diversities to prevent the traveller getting dull. There is a wonderful piece of road-making, to begin with, where the Government spent £3,500 in blasting a single mile of road out of the solid rock. They have left a tall splinter of the rock at one end, in order to show where the whole was at one time, and this is called the "Golden Gate," because the face of that tall cliff is all lined and streaked with yellow as though it were the quartz of gold.

From a] "MINUTE" GEYSER. *[Photograph.*

At last, after a drive of nearly four hours from the Mammoth Hot Springs, we reach the first geysers. It is a singular scene. Imagine a large field, fringed by a row of stunted and half-dead pines, the ground consisting of a dull white rock, and all over its surface, at frequent points, puffs of steam rising as though from the mouths of chimneys belonging to subterranean engines. As you look, suddenly a stream of water rises high in the air from a spot in the midst of the field. It lasts for some twenty seconds, and then disappears, but while yet you are gazing at the spot it darts up again, only to vanish once more as soon as before. This is the "Minute Geyser," that goes off as regularly every sixty seconds as though the subterranean engineer in charge were provided with a chronometer of excellent construction. The pool from which this eruption takes place is twenty-four feet in diameter, and the water is thrown some forty feet in the air.

This is almost certain to be the first geyser that the visitor sees, and for that reason the impression that it makes is strong. But it is by comparison with many others an insignificant one. There are fifty or more geysers at different points in the Park—in most cases a cluster of them is found together, though there are a few solitary ones—and amongst these there are all possible differences. Size, shape, time of going off, manner of performing, are different in each case. Some act with clockwork regularity; others have only been seen at work by dint of long-continued watching. Amongst the regular performers there is every possible variation as to the time of repose that they require. I hardly know which is the more surprising fact—that such convulsions should be regular or that they should be erratic; but certainly either is extremely astonishing to contemplate.

Near to the "Minute" is one more impressive in its ways. You look down into a

large hole, some twenty or twenty-two feet in circumference ; the interior and all round the edges is lined by a black, rocky "formation," from which the geyser is named the "Devil's Inkpot"; his Satanic Majesty, traditionally having the management of subterranean fires, naturally plays a considerable part in the nomenclature of this region. The water in the depths of the hole, however, is not black as ink, but only like soapsuds in a laundress's tub, a dirty bluish white. As you stand and watch, the water is gradually and quietly rising in the hole before you ; slowly it mounts till the pit is full to the brim.

Then with startling suddenness there is a leap in its centre—a pause, and then a series of jumps like violent boiling; and then the whole volume of water springs fiercely in the air with a hissing noise, and a cloud of hot steam around it, while all around the edges waves wash far out of the pool, flooding over the black "formation" that they, in fact, have deposited on previous occasions. This wild outburst lasts some five minutes, and then, all at once, the central commotion stops, and the water runs away down into the hole, exactly as though a gigantic mouth beneath were sucking it in. A dozen of those wild aspirations of the unseen drinker, and behold! the water has sunk down into the hole so far that only by leaning over can you catch a distant glimpse of its sullen, gleaming surface in the depths of the pit. Yet in twenty minutes the whole performance will be repeated.

But perhaps even more awe-inspiring than the geysers are those spots where steam escapes continuously and violently from a cleft in the earth, and as you stand beside it, terrible noises incessantly going on beneath your feet warn you of the struggle that the imprisoned power is waging against the superincumbent earth. To see so comparatively little and to hear so much impresses the imagination even more than the visible escape of the force. Not far from the "Inkpot" there is such an escape valve of a mighty invisible engine. Through a narrow slit torn in the earth the "Black Growler" pushes high into the air, without ceasing for an instant, a cloud of boiling hot steam, the hissing with which it is ejected being only an accompaniment to the horrid noises of rumbling and howling and growling that are making the earth under you shiver. Yet, so cold is the region where these exhibitions of the power of heat are going on, that when I was there, on June 19th, the bank of earth and "formation" that backs the "Growler" still had upon it a snow-drift some three feet thick, and the road in many parts was flanked by snow heaps. These, by the way, formed a great object of interest to two Californian men who were on the same coach with me. Born and brought up in that happy "Garden State," they had only seen snow falling two or

From a] "DEVIL'S INKPOT." *[Photograph.*

three times in their lives, and had never seen it lying on the ground. They ran about in it and played snow-ball with each other with great glee.

That the danger of being amidst such convulsions of Nature in the Yellowstone is not only a matter of imagination is proved by what is to be seen a short distance off from the "Growler," just through the belt of trees, viz., the "New Crater," which suddenly burst forth from a previously placid spot only three years ago. Huge blocks of stone and rock were flung forth with mighty force, and lie about in confusion, as though Titans had fought with missiles there; and the torn and rent earth, not yet covered up and concealed by the deposit of "formation," as it will be centuries hence, shows that there is some risk attendant on being amidst such scenes.

From a] "OLD FAITHFUL" GEYSER. *[Photograph.*

The multitude of boiling pools, the varieties of "formation" around them—according to the chemical element that predominates in the water—the various colours of the water dependent on the same cause, and the odours that many of the hot springs emit, make up a startlingly interesting scene. Yet this geyser basin sinks into insignificance after one has seen the more varied and splendid displays of more distant parts of the region.

A drive of some twenty miles more, passing on the way numerous hot springs, skirting a river that at one point develops a beautiful fall, over mountain passes, and through forests of pine, and we arrive at the next great geyser valley or basin. It is some thirty square miles in extent, and contains seventeen geysers and about seven hundred boiling springs. The principal geyser there is the "Fountain," which springs from an opening thirty feet in diameter, and plays irregularly, every two to four hours.

This is one of the quietest and most pleasing of the geysers. Like a tamed tiger, it may be perhaps a dangerous plaything, but it conceals its power of ferocity and only reveals its strength as supple beauty. The main body of the water only rises about fifteen feet, so as not to alarm you, but beauty is secured at the same time by the constant flinging up of fine jets to some sixty feet; the effect is light and beautiful, as the sunshine catches the dancing jets and the spray and light steam-clouds above the mass of rising water.

Ten miles farther on again is the chief geyser basin, the valley where the largest number of the geysers and the most powerful and most regularly acting phenomena are found. It is a singular spot—a large bare field about a mile long and half a mile wide, with a river running through its midst, its surface irregularly dotted with the strangely-shaped cones and "formations" of the numerous geysers, and eternal clouds of steam hovering over it.

Of the many geysers here, no fewer than

seventeen are large and important enough to be worth naming and describing separately, but of course no visitor sees them all, for some act only at long intervals, such as the "Giantess," which takes fourteen days' repose after performing; and others are utterly irregular and spasmodic in their habits. But on the other hand, here is situated one of the most beautiful of its kind, which is so good as to play with perfect regularity.

Every sixty-five minutes, night and day, summer and winter, this fine display is given. The water slowly rises in the open throat of the deep cleft in the rock; and when it is nearly full, suddenly the fountain is flung high into the air, a full, bright, shimmering stream rising to a height of one hundred and twenty-five feet or more, the main body of it being two feet in diameter, though the steam that floats up makes it look far higher, and that which is blown around gives added width beyond the actual water.

From a] "GROTTO" GEYSER. *[Photograph.*

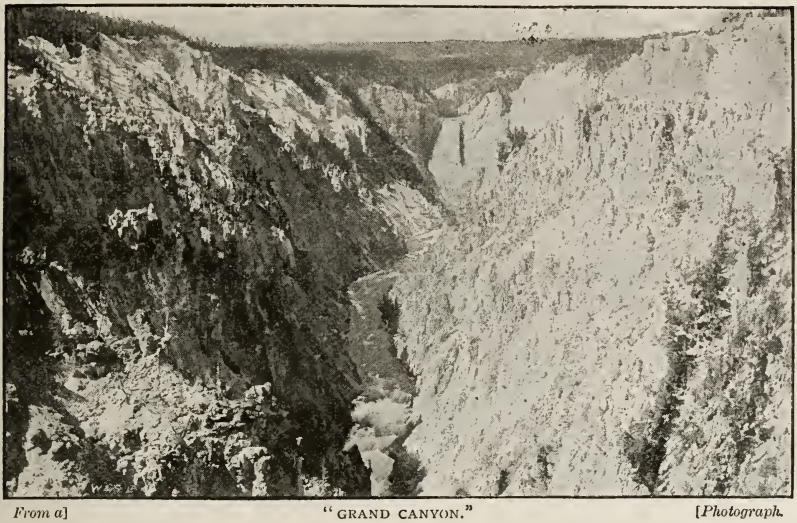
So great is the force with which this geyser rushes up that there is none of the jumping effect of a fountain; the tall column of water seems to stand stationary in the air for the full period of four minutes, and then, with only two or three gasps of hesitation, it falls down altogether. It is a truly glorious sight. The unworthy name given to this brilliant and powerful performer is "Old Faithful," in allusion to its regularity of action.

But to me the most impressive and awe-inspiring of all the geysers that I saw was the "Grotto." Its "formation" or cone has a singular shape—two rocky caves such as one might seek a witch within, and a tall central column standing up isolated between the two openings, like a stone for sacrifice—an unholy altar. As you pass it when it is in repose, there is no trace of what it is; no water around, no steam, but just the deep, dark, mysterious holes and the tall, suggestive pillar. Then to return to it, and to find it all a scene of wild commotion, violent hissing, and roaring sounds, clouds of steam so thick that only as the wind stirs them can you see through them, a rush of water all around, and at the centre the strong, fierce dash of wide column after column of water out of each hole, meeting in the centre over the tall pillar, grappling above it, each stream thrown foaming over it to seek refuge in the other side, and then flung back by striking against the rival outrush from the other side, the water flung twenty feet high, and the spray of the wild contest far higher, is like watching a combat of Titans: it brings confused but vivid fancies of all that has gone to make the earth, the days when such combats and terrors of Nature were at work all over the round globe; and one holds one's breath in presence of such overwhelming, uncontrollable force.

I have done with the geysers now; but before we travel away, some reader may care to be told what is the theory of science as to their method of action. In the first place, it is clear that either the crust of the earth is here thinner above the heated interior, or, what is another way of stating the same idea, the heated rocks of the centre of the globe are there nearer the surface than in most places. To them descends the water of the rains and the melting snows. It gathers their heat, it forms steam. This steam gets into the tube which some previous explosion of steam has formed and which has since naturally become a gathering-place for the lateral drainage of the earth.

Most people know that the boiling point of water differs at various elevations, owing to the different pressure of the air, which is heavier at the bottom of the ocean of air in

which we live than it is on mountains, and grows progressively lighter or heavier as we ascend or descend in altitude. Very well: the steam generated far below, seeking an outlet, gradually ascends the geyser tube under the surface of the earth, and pushes up the hot water in the tube above it, till the water is raised to that level in the tube where the air-pressure is reduced enough to make it boil at the heat which it possesses. Then it boils suddenly, and so produces a tremendous new pressure of steam at that point, which, in its effort to escape, flings all the water above it out of the hole, and keeps doing so till the steam of the interior is exhausted, when there is a pause until it is again generated, and the process is repeated.



From a] "GRAND CANYON." *[Photograph.*

After leaving this last of the great geyser basins, the Yellowstone traveller goes on to a lake, a pretty one, but dependent for exciting interest in those who have seen the Swiss and English lakes on the rather poor grounds that it is the highest lake in America, and that, though its waters are cold, there are hot springs in such close proximity that a fisherman can catch a fish in the lake, and without moving from his standing-place can turn round on his own axis and boil that fish in a hot pool, which will prepare it for eating in fifteen minutes. Hot springs have by this time, however, become so commonplace to us that we are rather surprised, and perhaps a little injured, to find any water that is cold.

Eighteen miles more, and we arrive at the last and not the least interesting feature of this remarkable excursion. It is a deep, long gorge, ravine, or, as they call it here, "canyon," that is unsurpassed for magnificence. It is some twelve to fifteen hundred feet deep, and the soft stone of which the sides are composed is worn into a thousand fantastic shapes. Here it is turreted and pinnacled like a Gothic temple, there rounded into the semblance of an ancient castle, or sculptured like a huge Egyptian statue against the face of the rocks. The Yellowstone River runs through the gorge, and looking along it one sees the spot at its entrance where the river plunges over a central layer of rock in a great cataract three hundred and sixty feet high — more than twice the height of Niagara Falls, but much narrower. But the true marvel and attraction of the great canyon is the wondrous, the incredible colouring of the rocks. It is more like a sunset spread at one's feet than anything else to which I can compare it. There are tracks of creamy white; layers of palest yellow shading through all tints to the deepest orange; reds and browns of all tones. These hues are mixed and mingled amongst the fantastic shapes, so that one hardly knows whether to be silent in amazement or to smile at the bizarre and unnatural spectacle, so like a showman's arrangement. But it is too huge and too mighty and too essentially grand to be smiled at; and one tears oneself reluctantly from the dizzy height at last, feeling, like the Queen of Sheba about Solomon's glory, that "the half cannot be told."

Favourite Books of Childhood.

By Frances H. Low.

THE following paper is mainly concerned with a sketch of children's books from early days, and a comparison of the stories in favour with children of to-day with those of preceding generations. The difficulty of finding out what boys read thirty, forty, and fifty years ago has been solved in the happiest manner by the graceful courtesy and co-operation of a group of distinguished living men, whose personal reminiscences will give a great fund of innocent pleasure and delight to all those who admire greatness, whether in statesmanship, literature, or science.

Story-books written especially for children are of comparatively modern growth, the first systematic attempt at supplying juvenile literature having been made in 1765 by Newberry, the publisher in St. Paul's Churchyard, of whom Leigh Hunt speaks with affection as being "the most illustrious bookseller of our boyish days, his little penny books being radiant with gold and rich with bad pictures."

But if children's books were unknown in the earlier days of English national life, it is not to be concluded that the little people were without rhyme and romance about which to delight and dream. Legends, the common inheritance of every race and nation, ballads, fables — there was the ever ingenious "Æsop," as well as others — were told and retold, and handed down by tradition until they were eventually printed; and in the chap-books of the 17th century most of the old-time nursery rhymes and legends are to be found. These entered every farm-house and cottage, and naturally came into the hands of the children.

Steele, in the *Tatler*, speaks of a little boy of eight years, who frankly declared he did not care much for "Æsop's Fables," because he did not believe they were true, but who was much better pleased with the lives and adventures of "Don Belliani of Greece," "Guy of Warwick," "The Seven Champions of Christendom," and other historians of that age. "Guy of Warwick" was a popular hero with boyhood, and no wonder. His adventures and prowess out-hero Baron Munchausen's, and on one occasion he is set upon by sixteen assassins, whom he overcomes, slaying *en passant* bears, monsters, dragons, and the like.

The valiant "Jack the Giant-Killer," the complacent, boastful little "Jack Horner," "Tom Thumb," and many another nursery hero, were familiar and beloved personages to 17th century children through these odd little chap-books. Some of these chap-books—written with an eye to edify, or, as it would seem to us, to terrify, the small folk—are very curious reading.

By way of compensation, the 17th century child had one book that has ever had a perennial charm for generations of children, as well as for their elders; and the allegory, imagery, and poetry of which have imprinted spiritual truths upon immature minds with an ineffaceable stamp. I mean, of course, the "Pilgrim's Progress." It is in no way necessary here to point out the qualities of this beautiful tale that strike a child's fancy and captivate his imagination, whilst at the same time interesting, satisfying, and delighting the sage and philosopher.

About this book, and the masterpiece of Defoe, which appeared a little later, in the early part of the 18th century, there is a remark to be made. The head masters of some of the London and country public schools have kindly aided me in discovering what books are most popular with modern schoolboys, by having an inquiry made upon this point. The boys examined for the most part belong to the middle and upper middle rank, and their sincere, undraped confessions are instructive as well as (to me, at least) astonishing. Three hundred of these lists lie before me, and in only five of their number does the name of Bunyan's wondrous legend occur at all. It is the same with the girls. The head mistress of a large school for girls in the north of London kindly permitted a similar inquisition, with the result that only two little girls out of one hundred and fifty gave in their allegiance to the "Pilgrim's Progress."

But if I turn to the roll-call of stirring names contributed by the older men, I find that the "Pilgrim's Progress" has frequently if not invariably, a place of glory. Mr. Gladstone, Mr. W. E. Lecky, Mr. Walter Besant, Prof. Dowden (who says, "I had a